

ABSTRACT OF THE DISCLOSURE

A control device for an internal combustion engine, including: an ion current detecting unit for detecting an ion current flowing between electrodes, via ions generated in a combustion chamber upon combustion, at a time when a voltage is applied to electrodes arranged in a combustion chamber of the internal combustion engine; a parameter extracting unit for extracting an ion current characteristics parameter correlating to an IMEP, from the ion current detected by the ion current detecting unit; an IMEP-related-information calculating unit for using the ion current characteristics parameter outputted from the parameter extracting unit, to calculate information relating to the IMEP of the internal combustion engine; and an internal combustion engine control unit for controlling operations of the internal combustion engine based on the output from the IMEP-related-information calculating unit.